



USING THE ASTROPHYSICS SOURCE
CODE LIBRARY FOR EDUCATION
AND RESEARCH CREDIT

Alice Allen, aallen@ascl.net
University of Maryland, College Park, USA

Robert Nemiroff, nemiroff@mtu.edu
Michigan Technological University, Houghton, MI, USA

The background is a dark blue and purple space scene. It features several celestial bodies: a ringed planet (like Saturn) in the upper left, a cratered moon-like sphere below it, and a striped planet (like Jupiter) in the lower right. The space is filled with numerous white stars of varying sizes and colors, along with soft, glowing nebulae in shades of teal and purple.

SHOW OF HANDS

- ★ ASCL (Astrophysics Source Code Library)

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- ★ ASCL (Astrophysics Source Code Library)
- ★ ADS (Astrophysics Data System)

- ★ **Registry** of software written by scientists
 - ★ **available** (open)
 - ★ **used** in research
- ★ Each code is assigned a **unique identifier**
- ★ **Free** service

- ★ Nearly **4,000 codes**
- ★ Covers **all aspects** of computational astrophysics and
- ★ **all major software languages** used in astro

Welcome to the ASCL

The Astrophysics Source Code Library (ASCL) is a free online registry and repository for source codes of interest to astronomers and astrophysicists, including solar system astronomers, and lists codes that have been used in research that has appeared in, or been submitted to, peer-reviewed publications. The ASCL is indexed by the [SAO/NASA Astrophysics Data System](#) (ADS) and Web of Science and [is citable](#) by using the unique ascl ID assigned to each code. The ascl ID can be used to link to the code entry by prefacing the number with ascl.net (*i.e.*, [ascl.net/1201.001](#)).

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2026 Mar 17

[submitted] [Skynet SOAP: A science-ready aperture photometry pipeline for observations made with the Skynet Robotic Telescope Network.](#)

[Schlekat, Donovan G.](#)

Skynet SOAP is a field-wide aperture photometry pipeline for astronomical observations from the Skynet Robotic Telescope Network. The software performs automated source extraction, background subtraction, aperture photometry, catalog cross-matching, and photometric calibration for all sources in an image. It supports SEP-based source extraction and photometry, forced photometry at user-specified sky positions, limiting-magnitude estimation, configurable aperture selection, calibration against catalogs including SkyMapper, APASS, and Pan-STARRS, and export to multiple tabular

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general info

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[[ascl:2502.026](#)] [polkat](#): Semi-automate full polarization of MeerKAT observations

[Hughes, Andrew K.](#); [Cowie, Fraser J.](#); [Heywood, Ian](#); [Hugo, Ben](#)

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Code site: <https://github.com/AKHughes1994/polkat>

Used in: <https://ui.adsabs.harvard.edu/abs/2024MNRAS.533.1800G>

Bibcode: [2025ascl.soft02026H](#)

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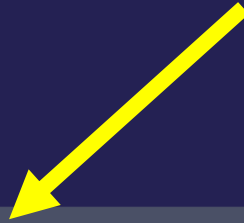
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[[ascl:1604.006](#)] [2-DUST: Dust radiative transfer code](#)

[Ueta, Toshiya](#); [Meixner, Margaret](#)

2-DUST is a general-purpose dust radiative transfer code for an axisymmetric system that reveals the global energetics of dust grains in the shell and the 2-D projected morphologies of the shell that are strongly dependent on the mixed effects of the axisymmetric dust distribution and inclination angle. It can be used to model a variety of axisymmetric astronomical dust systems.

[[ascl:2103.001](#)] [21cmDeepLearning: Matter density map extractor](#)

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21cmDeepLearning extracts the underlying matter density map from a 21 cm intensity field by making use of a convolutional neural network (CNN) with the U-Net architecture; the software is implemented in Pytorch. The astrophysical parameters of the simulations can be predicted with a secondary CNN. The simulations of matter density and 21 cm maps are performed with the code 21cmFAST ([ascl:1102.023](#)).

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- [\[ascl:2104.023\]](#) [PyBird: Python code for biased tracers in redshift space](#)
- [\[ascl:2104.024\]](#) [GAMMA: Relativistic hydro and local cooling on a moving mesh](#)
- [\[ascl:2104.025\]](#) [SpaceHub: High precision few-body and large scale N-body simulations](#)
- [\[ascl:2104.026\]](#) [Skye: Equation of state for fully ionized matter](#)
- [\[ascl:2104.027\]](#) [linemake: Line list generator](#)
- [\[ascl:2104.028\]](#) [globalemu: Global \(sky-averaged\) 21-cm signal emulation](#)
- [\[ascl:2104.029\]](#) [TES: Terrestrial Exoplanet Simulator](#)
- [\[ascl:2104.030\]](#) [lofti_gaiaDR2: Orbit fitting with Gaia astrometry](#)
- [\[ascl:2104.031\]](#) [Posidonius: N-Body simulator for planetary and/or binary systems](#)

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USING Δ SCL IN THE CLASSROOM

Using ASCL in the classroom

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- ★ Is there software that already does this?

Using ASCL in the classroom

- ★ What can I do with ASCL data?
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Tool building: [Software Citation Station](#), Wagg & Broekgaarden

- ★ What can I do with ASCL and AI?



CITING RESEARCH SOFTWARE EFFECTIVELY

Do you use software in your research?

Do you use software in your research?

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[Momcheva & Tøllerud \(2015\)](#)

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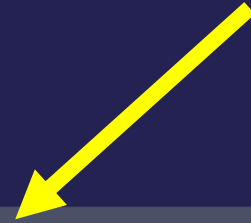
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Submissions

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The editors of the ASCL actively seek codes used in astrophysics research for inclusion in the ASCL. Have a code that should be included? There are three ways to submit a code:

1. Fill out [this form](#) for immediate inclusion on the website; submissions will be examined by an editor for completion and suitability and may be edited.
2. Speed your entry by pulling data from your codemeta.json file by using [this link](#) (still in beta; please let us know of any issues!) and then adding/editing information before submitting; your code will appear on ASCL and will be examined by an editor for completion and suitability and may be edited.
3. Alternatively, one may send the following information to the [editor](#):
 - Code name
 - Names of the code author(s)
 - Description of the code
 - URL from which the code can be downloaded
Note: ASCL can house an archive file of a code if no download website exists
 - Link to a research paper for which the code was used

Code does not have to be in the public domain for inclusion. The ASCL includes codes with any licensing scheme, ranging from public domain to any open source (e.g., BSD, GPL) to copyrighted codes.

Thank you!

Submissions

[Submissions](#) · [Style guide](#) · [Editorial policy](#)

The editors of the ASCL actively seek codes used in astrophysics research for inclusion in the ASCL. Have a code that should be included? There are three ways to submit a code:

1. Fill out [this form](#) for immediate inclusion on the website; submissions will be examined by an editor for completion and suitability and may be edited.
2. Speed your entry by pulling data from your codemeta.json file by using [this link](#) (still in beta; please let us know of any issues!) and then adding/editing information before submitting; your code will appear on ASCL and will be examined by an editor for completion and suitability and may be edited.
3. Alternatively, one may send the following information to the [editor](#):
 - Code name
 - Names of the code author(s)
 - Description of the code
 - URL from which the code can be downloaded
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Submit a Code

The ASCL gladly accepts submitted codes meeting our criteria. Your code will show up immediately for public viewing but will be subject to moderation. Code entries are examined by an editor for completion and suitability and may be edited; entries meeting our criteria will be assigned an ASCL ID and indexed by ADS.

Title

Plain text.

Credit

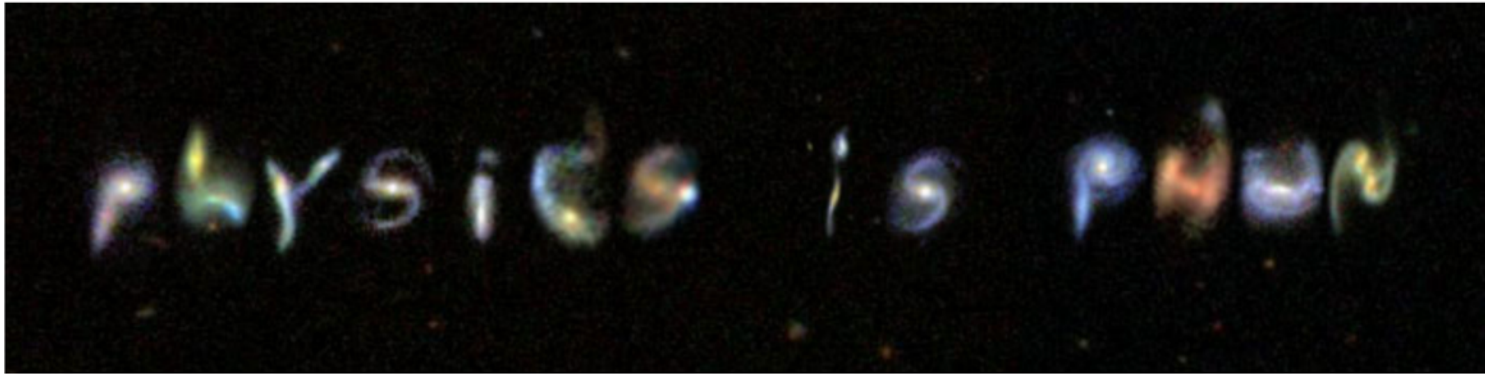
Names should follow the format Surname, Firstname I. Separate additional names with semicolons. Plain text.

Abstract

Plain text.

Site List

One link per line. This should be the URL to a site from where your code can be downloaded or copied.



Bot Challenge

Bot challenge: Type what the galaxies say.

QUESTIONS? AND THANKS!

- ★ Email: aallen@ascl.net
- ★ ASCL policies: <https://ascl.net/wordpress/about-ascl/policies/>

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